

Kennesaw State University DigitalCommons@Kennesaw State University

Dissertations, Theses and Capstone Projects

10-1-2013

Critical Thinking and Argument in First-Year-Composition: A Two-Part Assignment

Jason Burge
Kennesaw State University

Follow this and additional works at: <http://digitalcommons.kennesaw.edu/etd>



Part of the [Rhetoric and Composition Commons](#)

Recommended Citation

Burge, Jason, "Critical Thinking and Argument in First-Year-Composition: A Two-Part Assignment" (2013). *Dissertations, Theses and Capstone Projects*. Paper 591.

This Thesis is brought to you for free and open access by DigitalCommons@Kennesaw State University. It has been accepted for inclusion in Dissertations, Theses and Capstone Projects by an authorized administrator of DigitalCommons@Kennesaw State University.

Critical Thinking and Argument in First-Year-Composition:

A Two-Part Assignment

By

Jason Burge

A capstone project submitted in partial fulfillment of the

Requirements for the degree of Master of Arts in Professional Writing in the Department of
English

In the College of Humanities and Social Sciences of Kennesaw State University

Kennesaw, Georgia

2013

College of Humanities & Social Sciences
Kennesaw State University
Kennesaw, Georgia
Certificate of Approval

This is to certify that the Capstone Project of

Jason Burge

Has been approved by the committee
for the capstone requirement for

the Master of Arts in Professional Writing
in the Department of English

December 2013

At the (month and year) graduation

Capstone committee:

Beth Deep
Member

Janna McGrath
Member

Contents

I. Introduction: Why Teach Critical Thinking? 4

II. Literature Review: Critical Thinking and Argument 14

III. Methods: A Two-Part Assignment 29

IV. Results: Critical Thinking Elements in Two Essays 36

IV. Conclusions 59

V. Appendices 65

VI. Works Cited 72

I. Introduction: Why Teach Critical Thinking?

The issue of what to teach in First Year Composition (FYC) courses hinges on a fundamental question: what is the purpose of teaching writing? As students in all academic fields must eventually write, and learn to adapt to the particular language and standard rhetoric of their field, it seems the purpose would be to impart the skills necessary for them to perform adequately-to-superbly with regards to these standards. This raises the question to both teacher and student: what, if they are specializing in engineering, computer science, or biology, can students learn from an early composition course that will be valuable to them as they move along their educational vector?

In my experiences with writing assignments as a student, I found that the prompts that stood out the most were those that challenged me to delve below the surface of an issue and into the heart of its logical, social, or moral implications. In these assignments, I was required not just to write, but to think critically about the subject matter. While I learned to think through problems or understand concepts in other disciplines, it seemed that writing assignments which challenged my existing beliefs forced me to make the greatest leaps in abstract thinking. When examined closely, this correlation makes sense. Students are rarely asked to struggle with new concepts and modes of thinking while trying to integrate these ideas into their own words. It's a difficult process on many levels, but I believe that the more opportunities students are given to make progress as thinkers the better.

Critical thinking as it applies to the university classroom is not a new topic. In his book *Our Underachieving Colleges*, Derek Bok presents a study indicating that 90 percent of university faculty consider critical thinking the prime goal of a university education (67-68).

Institutions such as Washington State University, as well as Baker University, a private liberal arts college in Kansas, have implemented curriculum-wide studies and metrics designed to integrate critical thinking pedagogies into every level of education; both schools tasked writing instructors with heading the integration. John Bean, director of the writing program at Seattle University and chair of the Task Force on Teaching and Learning, posits that writing is our best thought-teaching tool. In his book *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*, Bean uses process-based writing theories to move students from a position of passive to active learning and writing, and packages the assignments so that they can be implemented by professors from all disciplines. The fundamental premise of his work is that there is no right or wrong way to integrate critical thinking and writing assignments into curricula, and that their inclusion into any genre can be a seamless process that will bolster the progress of students engaging any subject matter. He notes that while many exercises promote thinking, "the most intensive and demanding tool for eliciting sustained critical thought is a well-designed writing assignment on a subject-matter problem" (xvi).

In the first-year composition classroom, integrating critical-thinking-based assignments presents the challenge of finding space amid competing pedagogical methods and outcomes. The Council of Writing Program Administrators have suggested that by the end of First-Year Composition, students should be able to:

- Use writing and reading for inquiry, learning, thinking, and communicating
- Understand a writing assignment as a series of tasks, including finding, evaluating, analyzing, and synthesizing appropriate primary and secondary sources

- Integrate their own ideas with those of others
- Understand the relationships among language, knowledge, and power (Yancy).

To achieve such goals in FYC, there must be an effort placed on bringing students of all levels of writing ability to higher levels of analysis, synthesis, and multi-perspective reasoning through writing assignments. No easy task, especially considering that many FYC students are still grappling with writing fundamentals. And as David Bartholomae notes in "Inventing the University," students are already in a struggle to understand the new academic language they are expected to absorb almost overnight, a language which may stifle their ability to express themselves and may not serve a practical purpose (626-627). Can we expect them to learn complex modes of thinking amid this tumult?

The first step toward becoming a member of the academic discourse community is participating in the discourse that surrounds issues students encounter in their fields. However, there is a significant gap between first-year college students and those who have already entered the discussion. In order to truly participate, the student needs a familiarity with the existing knowledge in the discourse community, and the ability to engage it on a meaningful level. Students can obtain this knowledge through study, but how do they learn how to engage the material critically? In the article "The Novice as Expert: Writing the Freshman Year," Harvard writing director Nancy Sommers and Professor Laura Saltz observe:

Students need to immerse themselves in the material, get a sense of the parameters of their subjects, familiarize themselves with the kinds of questions asked of different sets of evidence, and have a stake in the answers before they

can articulate analytical theses. All of this takes time, more time than any freshman can possibly devote to a subject. (134-135)

The paradox here is that there isn't enough time in FYC for them to immerse themselves deeply enough in the dialogue to effectively join the discourse, and yet they cannot begin to develop thinking skills without active engagement.

Should we accept that this is a losing battle and focus on mechanics, style, and applied writing in FYC? Research at Washington State University, which I address later, indicates that there is often an inverse correlation between "critical writing" and "correct writing." It may be that we must sacrifice a level of correctness to focus on improving the quality of the thinking behind the work. In their research on revising modern thought on how writing is taught in the FYC classroom, Professors Douglas Downs and Elizabeth Wardle agree:

As teachers of college composition and researchers of writing, we want—and are taking—license to decide that what students. . . *know to do* in order to conduct critical, researched inquiry at the college level is more important than whether they master APA format or produce marginally more fluent writing. (567)

If it is more important to focus on critical thought and inquiry than on writing mechanics and correctness, then writing assignments should lead with critical thinking as a goal, rather than as an incidental consequence.

The challenge is determining what kinds of assignments help students learn the process of thinking through complex ideas, weighing pieces of evidence against each other, and reaching conclusions that, through their own insight, can enable them to participate in academic discourse. . In contrast to reflective or analytical writing, argumentative writing creates a space where academic writing and individual thought come together. Sommers and Saltz concur:

For students accustomed to the five-paragraph model of writing, entering a debate or unraveling a puzzle represents an entirely new way of writing. To write about philosophy, to practice moral reasoning, is to write in an argumentative mode. Even the texts students analyze are structured as arguments. The assignments encourage students to begin within these arguments by summarizing and assessing them but to move beyond the familiar territory of summary and give "something more"- their own reasoning. (137)

If it is in argument that students best engage their own reason, then there is a need for assignments designed to challenge them to do so and improve their critical thinking by synthesizing their ideas with existing scholarship.

Because the best instruction I have received in such methodology was in organized debate, the heart of which is building arguments, I searched for a solution to this problem in my debate experience. In high school, I participated heavily in moral and political debate on a state and national level, and coached high school debate as an undergraduate. As a debater, I was required to analyze resolutions with political and philosophical implications and argue for both the affirmative and negative of each. Initially, my bias on each resolution would lean toward one side or the other, as my existing ideological framework was all I had to evaluate the issue. Yet once I'd built cases for both sides, and spent time defending and challenging ideas from both viewpoints, I found that my initial perspective on each topic changed. Ultimately these exercises shaped my thought patterns and how I approached any issue, when academically or personally. Having reached a level of comfort arguing for and against resolutions, it has become a habit to examine both sides of any issue carefully before I choose a position.

When I examined my experiences with university-level liberal education, I found that seldom was I called upon to think at this level of abstraction; I wrote countless argument papers, but I rarely was asked to confront my own premises or epistemologies. Argument is a staple of many composition courses, but when first-year writing students are asked to choose a topic for which to make an argument, are they likely to explore an idea that is in conflict with their own belief while mired in a new academic environment? When students create arguments for something they already believe, they are often bolstering existing premises with evidence. Students are taught how to research and build an argument, but not necessarily how to examine their own views and the deeper issues driving both sides of the debate. This could be a result of the nature of most written argument assignments.

Eastern Washington University rhetoric and English professor Larry Beason encountered a consistent trend when surveying ten popular composition textbooks focused on argumentative writing, which included *Writing Arguments: A Rhetoric with Readings* by John C. Bean and John D. Ramage and *Current Issues and Enduring Questions: A Guide to Critical Thinking and Argument, with Readings* by Sylvan Barnet and Hugo Bedau, *The Shape of Reason: Argumentative Writing in College* by John T. Gage, and *Elements of Argument: A Text and Reader* by Annette T. Rottenburg. Beason related that most are strong in terms of presenting rhetorical strategies for building arguments, but that the readings may be substantively overwhelming for freshmen and that "Many of the texts are not greatly practical in terms of how they would correlate with major writing assignments" (5). He suggests that argument-building concepts are strong but built piecemeal, designed to teach approaches to narrow rather than broad argument building. If the texts are too complex or obtuse, and the support for major assignments lacking,

instructors need to fill the gaps with carefully crafted argument writing projects that can improve critical thinking.

Composition textbooks and existing scholarship suggest that increasing critical thinking and reasoning skills is a primary goal in the composition classroom, but significant challenges exist around crafting assignments that actually create an opportunity for student growth - and whether first-year students have the capacity to make strides in spite of their lack of knowledge. In his article "Using Written Dialogue to Develop Critical Thinking and Writing," Stephen Hahn further complicates this predicament, noting that "Many students 'get stuck' in the development of critical thinking skills and in writing because they under-conceptualize the context in which controversy occurs, and because they have not been shown that the monologues of written discourse are actually fragments of ongoing debates" (98). If students view academic and social issues as black and white, rather than as ongoing dialogues, they are unlikely to join the conversation. And if they don't believe there is room for argument and exploration, and that their ideas can be part of the scholarship, they won't begin to practice being a member of the community.

Without improving student critical thinking skills, we are simply producing graduates who can only report information. Certainly, some graduates discover these skills on their own, and become significant voices in their field. To solve a part of this problem, my research question became: Is there a way we can consistently teach students to be better thinkers? And then this leads to another question: Can we measure that progress? The response to both is yes we can. As Syracuse Professor Seth Kahn observed, "Why teach writing? Because a writing course is a place to work on all kinds of issues/problems/topics without having to be specialists on those issues/problems/topics" (xix). This open subject matter creates fertile ground for

exploring not just ideas, but where our ideas come from, and whether we should embrace, revise, or reject them.

Shifting FYC to place critical thinking at the forefront poses several challenges. Writing instructors must embrace the idea that learning to think is as important as learning to write and design curriculum to reflect this change. Rather than a focus on research methods and essay structure as stand-alone concepts, these would have to be taught in conjunction with modes of thinking and strategies to approach a topic not just as an argument, but as an argument that exists within a much larger dialogue. Students must also engage topics with greater personal investment; rather than producing academic work aimed at simply pleasing the instructor or meeting rubric requirements, they must bring their own belief and biases to the conversation and be willing to challenge them directly. Such a migration would require assignments with a fairly high degree of planning and detail to create an environment for students to thrive; they must be challenged in a way that makes critical thinking inevitable.

One of the greatest challenges surrounding the objective of teaching critical thinking is actively engaging the students' minds in a way that encourages them to think at a level of abstraction they might not have been comfortable with or experienced before. In his *Symposium*, Plato observes: "For herein is the evil of ignorance, that he who is neither good nor wise is nevertheless satisfied with himself: he has no desire for that of which he feels no want" (40). If Plato's premise is true as it relates to the FYC classroom, then students cannot or will not seek knowledge when they believe they have no reason to. It could be assumed that when students have enrolled in an institute of higher learning, that one of the most basic needs they seek to fulfill is a lack of knowledge or skill. But how do students come to the point of recognizing this need and acquire the impetus to seek knowledge? They must learn to question their own

knowledge, an exercise that is not easily engaged, for if they doubted their existing premises, they would have already gone about redefining them. Questioning issues fundamental to their beliefs or identities is a daunting task for students who are already facing the difficult transition into the world of college writing. But we must consider whether the university has any obligation to protect these beliefs even if questioning them is psychologically challenging; learning to think in new ways is one of the most difficult but rewarding results of education.

Baker and Washington State Universities' studies on critical thinking as it applies to writing mark some of the most significant work on the subject, but leave much room for further analysis. Both have found that writing can be a crucial element to improve critical thinking, but that writing alone is not enough. The Washington State initiative showed that without a significant focus on the elements in critical thinking in assignments, that students are unlikely to make improvements on their own. Writing department co-directors and project leads William Condon and Diane Kelly-Riley observe that "Writing acts as a *vehicle* for critical thinking, but writing is not itself critical thinking" (66). WSU's initiative gave solid evidence that critical thinking in writing can be measured on a broad scale across a student body, but did not focus on individual assignments and their impact on critical thinking.

In researching instructor-crafted assignments which encouraged students to read and write critically while analyzing both sides of an issue, I found that often the instructor noted a favorable increase in writing and thinking performance over the course of the project. This confirmed my belief that these kinds of assignments produced positive results. However, in research in textbooks and academic research on such assignments, I did not find concrete, coded metrics attached to the results to help understand how and in what context the students improved. If examining both sides of an issue increases critical thinking, when does that occur, and what

specific elements of critical thinking are involved? Is the topic itself important? Do students' existing biases play a role in the use of critical thinking, i.e. will they engage greater critical thinking skills when forced to confront their own beliefs?

It was my aim to design an assignment that could help answer these questions and provide FYC instructors a useful tool to increase critical thinking in their students. Elements of this assignment were inspired by debate, counterargument projects, and tasks centered on problem resolution, but nowhere in my research did I find an assignment incorporating all these elements in addition to challenging bias. This project's purpose is to create an environment in which critical thinking is required for success with reliable and replicable steps toward that end; though it requires a great deal of instructor-led discussion, planning, and guidance, its implementation will allow the instructor to help broaden student capacity for idea formation and critical analysis. It not only encourages students to think within the context of the assignment, it teaches them the kind of skills needed to begin their own inquiries, both in their existing thought patterns and in their fields of study.

In the next chapter I review existing scholarship on critical thinking: how is it defined, how it is integrated into writing instruction, and challenges instructors have faced in crafting assignments designed to engage critical thought through writing. In the following chapter, I outline a research study I conducted a FYC classroom on a two-part writing project designed to improve critical thinking and address individual bias. Finally, I review the results and the significance of implementing such an assignment and how it might be used and improved upon in the composition classroom.

II. Literature Review: Critical Thinking and Argument

Critical thinking has become a buzz word in academia, drawing with it as much suspicion as praise. For each scholar representing the merits of critical thinking and its instruction, there are those who suggest that it is a nebulous term, overused and under-defined. Boston College writing and philosophy professor Albert Keith Whitaker disparages the term, observing that "It has filled minds with fog and duskiess and the air with a strange, and empty, phraseology" and that "It also promises that everyone can become a 'thinker' without having to learn a bunch of rules, or study for years, or, God forbid, memorize pages and pages of material" (57). Auburn English professor Miriam Clark concurs:

As a default term, *critical thinking* is emptied of meaning. At worst, it's disingenuously advanced to conceal the fact that faculty can't agree on *what* knowledge, skills, and attitudes students should acquire in their college courses. At best it's a high and singular calling that overrides the dynamic tensions and vital particulars that make our work satisfying. (325-326)

Both bring an important issue to light: without concrete definition and a unified pedagogical approach, critical thinking is conceptually too vague to give merit. But I propose that the increased focus on teaching critical thinking in the writing classroom and beyond stems neither from a side-stepping of the work associated with normal academic discovery, nor from a need to obfuscate a lack of pedagogical focus. Critical thinking is not meant to replace inquiry and years of study, and it can and has been defined and successfully taught in the composition classroom. Regardless, critical thinking's dubious reputation does require exploration if we are to determine how to teach it in the context of writing and argument.

Scholars approach defining critical thinking from varying angles, though there is a great deal of common ground between them. Michael Scriven and Richard Paul, advocates for the National Council for Excellence in Critical Thinking Instruction, define critical thinking as an intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and evaluating information. On their site, “The Critical Thinking Community,” they propose that a critical thinker:

- raises vital questions and problems, formulating them clearly and precisely;
- gathers and assesses relevant information, using abstract ideas to interpret it effectively;
- comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;
- thinks open mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and
- communicates effectively with others in figuring out solutions to complex problems.

Scriven and Paul go on to suggest that critical thinking instruction must begin in elementary school and proceed through all levels of education.

Jerome Bruner, psychology professor at New York City University, equates critical thinking with discovery, noting that it is "in its essence a matter of rearranging or transforming evidence in such a way that one is enabled to go beyond the evidence assembled to new insights" (83). Synthesis is a key element in many definitions and one that appears often in the work of critical thinking scholars. The crucial element is the ability for students to take what they have found and filter it through their belief systems, thus coming up with something that is based on both current theories and their own beliefs, a synthesis of existing thought and new concepts. Philosophy professor Philip Wheelwright, summarizes this element succinctly: "Things have

contexts, but only a person has perspectives. The essential structure of writing, then, is a matter of creating perspective, and the essential excuse for writing is to unveil as best one can some perspective that has not already become ordered into a public map" (16). Of course, if we believe Solomon, nothing new is under the sun; synthesis doesn't necessitate that students develop ideas that consist of elements previously unknown to the discourse community. Rather, it refers to a true amalgam of existing perspective and new information. In this study, it was the dog-lover making the leap to extend the same affection to cattle, or the vegetarian accepting that for many the lifestyle is not economically feasible, especially outside first-world countries. It is the process of integrating a new idea into existing ideology, adding it as a facet in the lens of their perspective and demonstrating the change in writing.

Scholars Colleen Garside and Barry K. Beyer examine the nuances of critical thinking in greater detail. Garside, a professor of Communication at the University of Utah, posits four defining goals of critical thinking: "(a) Clear, precise, accurate, relevant, logical and consistent thinking; (b) a controlled sense of skepticism or disbelief about claims, assertions and conclusions; (c) taking stock of existing information and identifying holes and weaknesses; and (d) freedom from bias and prejudice" (215). Garside acknowledges the necessity of understanding logos and ethos as these appeals pertain to examining information and claims, as well as evaluation, but brings another important issue to light: bias. Attempting to achieve freedom from bias is essential to thinking critically. While impossible to overcome entirely, bias is perhaps the greatest hindrance to advanced thought. Beyer, a noted theorist on critical thinking instruction, offers an even more complex system of evaluating critical thought:

- (1) Distinguishing between verifiable facts and value claims, (2) determining the reliability of a source, (3) determining the factual accuracy of a statement, (4)

distinguishing relevant from irrelevant information, (5) detecting bias, (6) identifying unstated assumptions, (7) identifying ambiguous or equivocal claims or arguments, (8) recognizing logical inconsistencies or fallacies in a line of reasoning, (9) distinguishing between warranted and unwarranted claims, and (10) determining the strength of an argument. (273)

Like Garside, Beyer recognizes logic and credibility, evaluation, and reducing bias as cornerstones of critical thought. While individuals aren't capable of being completely free of bias, it seems that pursuing an unbiased viewpoint is at the heart of students becoming better critical thinkers in FYC.

Patterns begin to emerge when surveying critical thinking scholars. The improved ability to weigh arguments and the validity of those arguments judged by source, logic, and bias is a common university goal for students' success, as is imparting the skills needed to synthesize existing scholarship into students' perspectives. In 1987, Washington State University (WSU), led by writing professors William Condon and Diane Kelly-Riley, began implementing a program to integrate critical thinking instruction throughout the entire curriculum. They drew from the work of Richard Paul, Stephen Toulmin, Peter Facione, as well as a host of other scholars to develop these core critical thinking competencies in every student. To ensure these concepts permeated the university, they developed the following rubric for how instructors should develop assignments and subsequently evaluate student performance.

1. Identifies and summarizes the problem or question at issue (and/or the source's position)
2. Identifies and presents the STUDENT'S OWN perspective and position as it is important to the analysis of the issue
3. Identifies and considers OTHER salient perspectives and positions that are important to the analysis of the issue

4. Identifies and assesses the key assumptions
5. Identifies and assesses the quality of supporting data or evidence and provides additional data or evidence related to the issue
6. Identifies and considers the influence of the context on the issue
7. Identifies and assesses conclusions, implications, and consequences (6-7)

Using a writing assessment program developed to measure critical thinking elements, they found that students' higher-order thinking improved significantly when this rubric was applied to assignments and outcomes (14). Of particular note in this rubric is the inclusion of both a student's perspective and other important perspectives outside their own.

Of the many outcomes of the WSU Critical Thinking Project, some of the most significant were observed in Condon and Kelly-Riley's study of the relationship between college-level writing and critical thinking abilities. As I noted previously, they found that there is no inherent link between the advancement of critical thinking skills through writing assignments without a focus on that desired outcome. They found, however, that when the rubric was applied to writing as it relates to composition studies, and students informed of the new goals of the projects, that some of the most significant leaps in critical thinking occurred, as much as three-and-a-half times in courses that used it versus those that didn't. Their study also uncovered a relationship that they had not expected. Students that scored well on their Writing Placement Exam, designed to quantify focus, organization, support, fluency, and mechanics, scored lower when the same work was evaluated using the *WSU Guide to Rating Critical Thinking*, and vice versa. To summarize,

The better the writing, the lower the critical thinking score, but the more problematic the writing, the higher the critical thinking score...It seemed that our

own writing assessment practice tended to elicit and reward surface features of student performance at the expense of higher order thinking. (61)

Their findings suggest the existence of what may be two competing outcomes in the composition classroom. At the least, the results suggest that good writers, if we judge them by their ability to produce work that we consider traditionally correct, tend to write content that lacks essential elements of critical thinking. If this is accurate, it may be that writing assignments that focus more on proper writing than on developing critical thought lead students astray from the purpose of education: to become part of the conversation, rather than to summarize it eloquently.

Washington State is not the only university to conduct an extended study on the relationship between writing and critical thinking. Baker University, led by critical thinking and writing Professor Donald L. Hatcher, implemented a seven-year study on the effects of combining critical thinking and composition into a two-class series for first-year students. Whereas previously they were taught separately, the premise was that teaching critical thinking as applied specifically to reading and composition would yield greater improvement in thinking and writing. Before the study, it had been determined that one-semester courses on critical thinking and writing had little impact on improving either subject. The classes focused on improving argument and logic skills, employing assignments designed to help students understand the importance of critical thinking to a citizen in a democratic society and the necessity of evaluating alternate viewpoints, challenging students to face their own views and how they had become socialized. Using the California Critical Thinking Skills Test and the Ennis-Weir (a writing evaluation test), students in both groups were evaluated (taking these tests separately vs. the integrated two-semester model) twice, before and after. Students who took the integrated classes showed consistent and marked improvement on both, while students who took

them separately showed little or no improvement. It was the conclusion of Hatcher and his team of researchers not only that critical thinking and composition should be taught together for first year students, but also that teaching them separately offered little benefit (171-175).

The Baker and WSU initiatives indicate that writing and critical thinking can be correlated, but only if assignments are designed to encourage critical thought. While a variety of projects can encourage abstract evaluation, few can accomplish as many of the desired critical thinking outcomes as assignments based around developing arguments. Nancy Burkhalter, in her article "How Persuasive Writing Aids Critical Thinking," agrees, as argument requires students to engage a subject on multiple levels. According to Burkhalter, "Critical thinking is facilitated specifically through persuasive writing because this genre requires the additional skills [in addition to writing] of formulating reasons, analyzing, and finally synthesizing them into new ideas and conclusions" (13). A key contention she proffers is that argumentative writing requires writers to trust their own reasoning rather than simply relying on what they've read. The difficulty often encountered in trying to teach first-year students such skills is a lack of cognitive ability necessary to ascertain opposing ideas during concept formation; she uses, among others, Beyer's ten critical thinking skills as touchstones to begin evaluating and promoting these competencies in the classroom. Regardless of difficulty, she insists the unique burden persuasive writing places on the student in terms of analysis, evaluation, and synthesis make it an ideal tool for improving critical thought.

A study performed by Judith Sanders and colleagues in the California university system on 299 students receiving instruction in argument served to bolster this premise. In the article "Does Teaching Argument Facilitate Critical Thinking?" they explore the impact teaching argument has on how willing students are to engage in oppositional dialogue. The study

centered on the effect of instruction in argument on student performance focuses on key indicators of argumentativeness and verbal aggression. "Argumentativeness" involves a person's willingness to engage in discussion about the topic in question. "Verbal aggression" refers to an individual's tendency toward using personal attacks as opposed to logical and topical attacks, with a higher verbal aggression score indicating a stronger leaning toward the personal. The findings in the study were that students with classroom training in argument showed a higher score in a) the ability to discern weak argument, b) self-reported arguing effectiveness, and c) decreased verbal aggressiveness. These indicators lead the authors to a hypothesis that students who had participated in such a class learned to engage in argument more thoroughly which lead to improved critical thinking skills (27-35).

These studies indicate a positive correlation between writing arguments and critical thinking, though none of the studies published data on assignments and how individual projects achieved desired outcomes. Sommers and Saltz indicate that Harvard FYC students encounter difficult assignments specifically designed to move them quickly into the larger scholarly debate. They are tasked with challenging sources, arguing their own ideas, and joining the academic conversation very early in their writing careers, but this creates several challenges for instructors. It's difficult for students to grasp their new position as novice in the world of academia, so projects are developed to lead them step by step through the process. FYC students are led through these projects in this way:

They are given a structure for writing philosophical arguments: begin with a thesis, outline a debate, synthesize competing positions, notice questions and implications which arise from this synthesis, explain how these questions might be answered, offer counter arguments, and propose solutions. In encouraging

students to use this structure...the course relieves students of the responsibility of inventing the field for themselves. (138)

This structure, which takes much of the pressure off the students, places even more on the professors, who must take responsibility for much of what is happening in the writing assignment. If we expect students to join the debate, assignments can't be open-ended or summarizing in nature; they must be designed to lead them through the difficult process of understanding the existing arguments and building their own.

University novices, unfortunately, have additional challenges to overcome when writing assignments of this nature. For many students, there is a barrier in place preventing them from taking the first steps down the road to understanding: their reading and analytical skill. They must first be able to evaluate what they are reading before they can synthesize it into something that is their own. Cheryl Smith summarizes this challenge succinctly:

Writing assignments in college are typically based on reading. This becomes a problem for basic writers since much of their difficulty with academic work derives from their difficulty in interpreting texts. Since basic writers struggle with reading, they are sometimes classified as basic writers because their writing betrays their misunderstanding or misinterpretation of texts they are writing about. At the same time, their weakness in reading translates into difficulty in reading their own texts. That they are poor readers of their own work should not be surprising. After all, students can never outwrite their reading ability. (670)

Smith goes on to point out that these misunderstandings and misinterpretations stem from a lack of cultural or academic knowledge and can lead students to frustration and a sense that they cannot think well, or to simply give up. It's difficult enough to get students to read, to say

nothing of the task of getting them to read well, and to integrate the reading into their own knowledge.

In an analysis of his teaching methods, Duke University's Joshua Fausty also explores the challenge of instilling in his students a self-reflexive, critical approach to inquiry. Fausty concurs with Smith, stating that the process of bringing FYC students to more complex modes of thinking starts with reading:

My goals are largely the same as my program's: to help students establish themselves in a given academic discourse while preserving their own voices and values. Like the program administrators, I believe that such a task requires *active* reading—reading as a process of textual construction—and I favor a pedagogy that stresses the importance of students' appropriating new knowledge rather than simply showing what they already know. (502)

He observes that one of the most compelling methods to elicit this response in students is in the creation of compositions, and more specifically, with the development of written arguments. He cites Emmel, Resch, and Tenney when noting, regardless of the nature of an assignment, that “placing argument at the center of the composition course shows respect for students’ capabilities as language users, as inquirers, and as people who can challenge existing knowledge and construct their own” (xxi). It is in this process of developing argument that students are forced to challenge their current modes of thinking and attempt to create a new concept or unique perspective that belongs to them.

Both Smith and Fausty shed light on a crucial point which must be examined when attempting to teach critical thinking: students must learn to read critically before they can think critically and place themselves into academic discourse. The challenge is then to develop

assignments that increase both critical reading and writing skills. Professor Nancy Malcolm had success with such a writing project she implemented in a sociology class at Georgia Southern University. Students were expected to write critical analyses of current news articles, first summarizing, then piecing out the sociological elements of the material, defining and explaining concepts and terms in their own words. They then wrote on the connection between the learned concept and the facts of the article, linking the events to wider sociological theories. Finally, they were to delineate a point of divergence, in which the events in the article differ from the highlighted sociological concept. This final step proved the most difficult, but forced the students to integrate theory with practical concerns, ultimately reaching a greater and more personal understanding of both. Malcolm applied this exercise to several classes, finding that when at least ten such assignments were completed throughout the semester, scores consistently rose throughout, but that fewer assignments netted lesser or no gains, indicating that repetition of such critical thinking writing exercises can help improve both reading and writing (145-148).

With the complications surrounding novice reluctance, uneven reading levels between students, and the necessity of strong instructor involvement, crafting an argument assignment that will provide gains in critical thinking is a challenging undertaking. One particular assignment crafted by Ruth Stewart, English Professor at NOVA College in Manassas, Virginia, addressed these issues creatively. Stewart has all but abandoned traditional textbooks in her composition classroom and has shifted her focus to challenging writing assignments involving analysis and written argument. She insists that we underestimate the evaluation and thinking potential of our first-year students, and that assignments should focus on exercises involving *doing* academic work as opposed to being *prepared* to do academic work. She claims that

students who engage in these kinds of assignments improve not only their ability to think and evaluate critically, but also gain self-confidence and a new enjoyment of academic work.

Professor Stewart's assignment involves a controversial piece of American history: the Conestoga Massacre. Students are forced to confront a violent occurrence in U.S. history involving native Americans and citizens with limited documentation. Stewart supplies the class with documents that outline the event, but the evidence bears no easy answer as to the guilt or innocence of either party involved in the attack. They build an argument for one side or the other, and are then engaged to challenge each other's arguments at length through constructive peer-review. Students find themselves pulled in several directions when evaluating the material, ultimately reaching a greater impression of both sides by having no access to a definitive sense of right and wrong (162-171). Stewart notes in particular that the sense of doubt generates better papers; students must truly think before settling on a position. Her assignment solves the problem of lack of student knowledge on the topic by limiting the scope of research, and encourages broad thinking by offering a topic that offers no black-and-white answers.

Also inspirational to my study was an assignment designed by English professor Linda Desjardins. Desjardins outlines her ongoing success with a three-phased essay assignment in freshman composition. Students choose one topic of several they have been journaling about, in this case a school-related issue. They first develop a thesis from an idea through peer-review and revision, and develop an essay from this thesis aimed at a particular audience. After completion, they are tasked with writing on the same topic, but with a completely different audience in mind. Again, peer review is used to identify problems and establish clarity. When this alternate-audience piece is complete, they must write a third essay, this time from the perspective of one of the audiences they addressed previously, but this time they become a member of one of those

audiences and develop a counter-argument for their own original essay. In this way, they learn to experiment with audience and develop alternate viewpoints. Desjardins notes that this assignment doesn't always produce masterpieces. But with regard to idea presentation and argument, there is generally an improvement from one essay to the next in sequence, often resulting in multiple pieces submitted to the college newspaper (89).

In examining scholarly work, there were also those who refuted the effectiveness of opposing viewpoint assignments. Nancy Rennau Tumposky covers the upside and downside of using debate in the classroom, citing critical thinking and democracy as the framework for evaluation. She covers the metacognitive benefits of debate while considering the downside: from an epistemological standpoint creating dichotomy can lead to a dualist approach. In addition, the confrontational format is off-putting to some groups, particularly women. Rennau Tumposky concludes that debate itself is not properly suited in the classroom setting to promote critical thinking (52-55).

I agree that a live debate itself may have a negative impact on some students, and I acknowledge the dangers of a dualist approach. I believe, however, that an assignment which encourages students to write in opposition to an existing premise avoids the dualist conundrum by not necessarily giving them a one-side-or-the-other framework, but allowing them to explore *which* opposing arguments they consider relevant in an open forum. Topic choice can have a great impact on the freedom allowed here; abortion, for example, is very polarizing and leads to sharp lines of demarcation in debate. Stewart's Conestoga topic, on the other hand, is ambiguous enough to allow much exploration between extremes.

Literature on critical thinking and argument seems to concur on a few key points. Writing assignments appear to offer the best opportunity to teach critical thinking, and

specifically those which encourage students to engage in argument. Before instructors can expect positive results from writing, however, reading skills and exercises must be at a level facilitating critical thought, as students cannot out-write their reading level. When they have obtained those skills, they are in a position to build their own arguments using synthesis of their own knowledge and that which they explore to generate their own concepts – to *think* – and to learn the skills required to analyze their own arguments. Topics that require students to examine both sides of an issue offer particular benefit to them as participants in the academic conversation, as they must engage the highest level of thinking skills to evaluate all ideas and develop argument on multiple fronts.

Instructors have studied argument and crafted assignments similar to mine, but none I found took aim directly at a student's existing perspective. I wanted to craft an argument assignment that challenged a student's bias toward an issue on which he or she already had an opinion. Freedom from bias (as much as is possible) is agreed upon by critical thinking scholars as a key element in clear, high-level thinking, and first-year students need tools with which to identify and challenge their own biases wherever they may exist. To address the problem of critical reading and limited student knowledge, I narrowed the readings on the topic to five hand-picked articles, all reviewed in and out of the classroom to establish a common measure of student familiarity. Students would be allowed to choose the position to defend in their argument, but would not be told they would also have to then create a counterargument and attempt to dismantle their original position. My premise was that they would engage more elements of critical thinking in their second paper because, rather than supporting an existing belief, they would have to think in the abstract to build a case. Inspiring students to think in ways they have

not previously is a core goal in academic instruction; I wanted to craft a project that would accomplish this end with predictable results.

III. Methods: A Two-Part Assignment

The two-part writing assignment I developed was implemented in a Composition 1101 course at Kennesaw State University in the fall semester of 2012 and administered by Teaching Assistant Caitlin Martinez. My goal was to discover whether students are able to engage higher order thinking skills when approaching an issue from a viewpoint opposing their own in the context of a written essay, rather than one in which they simply support their existing belief.

The topic in question was chosen in collaboration with Ms. Martinez. We determined that the issue must be somewhat polarizing, and one toward which the students should have some preexisting bent, but not a potentially immutable position on such an issue as the death penalty or abortion. Vegetarianism seemed an excellent issue to explore for this assignment; each student would have already made a choice to be omnivorous or vegetarian, though they may or may not have examined the issue closely. We felt the topic, with its ethical, economic, nutritional, social, and cultural implications, offered rich ground for exploration. There is also a great deal of modern media from each of these categories on both sides of the vegetarianism debate without a heavy cultural bias toward either.

The issue was introduced in a series of five journal articles on the topic, spanning the range of arguments for and against a vegetarian diet, and across multiple journal formats—from the scientific to the socially conscious, with a variation in voice and style. The readings were presented during a class unit on argument development, accompanied by materials from *Writing Arguments* by John Ramage, John Bean, and June Johnson. *Arguments* is the chosen text for the class, and I find its chapter on logic and argument development to be thorough and concise. In addition to the readings in the textbook on the fundamental elements of argument creation, students were also provided with Peter Boghossian's "How to Make an Argument" journal article, a brief but substantive guide to logical premise and agreement.

To address the issue elucidated by Smith and others – that critical reading is a requirement to critical writing – each article was discussed in separate class periods. It was Ms. Martinez and my opinion that without going over each article in class, the readings might not be absorbed by the students with the proper diligence and examination. Each article was examined in terms of how it made its case: the logical devices present, the emotional appeals, and the apparent audience. As the discussions unfolded in class, it became clear on which side of the divide most students were settling; as in most sample groups, the majority of the class trended toward an omnivorous lifestyle and tended to agree with articles that supported that lifestyle choice. Ms. Martinez was careful to avoid lending her own opinion on the matter to students, who were encouraged to explore the matter openly and without bias. We used the following articles:

1. "Give Thanks for Meat" by Jay Bost, *New York Times*, 2012. Bost was the winner of a *Times* essay contest on the ethics of eating meat. His stance is moderate but ultimately for eating meat in moderation. The article is short and editorial in nature.
2. "What's the Beef with Meat?" by Bob Holmes, *New Scientist*, 2010. This is an article in a scientific research journal that details the environmental and economic damage caused by meat consumption and the dangers if meat production increases along its current trajectory.
3. "Vegetarianism and B-12 Deficiency" by Aśok C. Antony, *The American Journal of Clinical Nutrition*, 2003. Antony's article about the potential nutritional risks of a vegetarian lifestyle is strictly scientific and neutral in tone.

4. "A Chicken Without Guilt" by Mark Bittman, *New York Times*, 2012. An editorial article, Bittman's anti-meat argument centers on the proliferating meat-substitute options which are becoming an increasingly viable and economically feasible option.
5. "Meat is Gross, But It Tastes Good" by Sally Tisdale, *Salon.com*, 2000. This article is very casually written and ultimately anti-meat, though it presents an interesting history of the industry that could have been used by either side of the issue. It was chosen from a less than credible source to give students an opportunity to evaluate not only its content, but also its credibility.

These choices were meant to present a variety of sources and writing styles and to create an environment for discourse and idea clash.

After reviewing and discussing each article, students were then assigned a two-to-three page argumentative essay building an argument for one side of the issue: either for or against the merits of a vegetarian diet (See Appendix A). They were encouraged to use the sources covered in class as well as at least one credible outside source to support their position. The purpose of this assignment was to practice synthesis; by lending their own ideas to ones they evaluated in class, they could begin to build a more complex view on the topic. This was also meant to concretize their own belief in one side of the issue and serve as a barometer of where they stood. After writing a draft, students engaged in in-class peer review to refine their arguments before turning in a final paper (see Appendix B).

After receiving their graded papers, students were introduced to the next part of the assignment, the nature of which to that point had remained hidden. They would now write a second essay, this one in response to their first but from an opposing viewpoint (see Appendix C). If they had been pro-vegetarian in their first essay, the second would require them to

challenge their own premises and offer a counter position for the omnivorous diet, and vice versa. This essay would be longer, four-to-five pages in length with a new perspective. The first one or two pages of this essay would consist of a response to the student's original argument. They were tasked with analyzing their own work for logical inconsistencies, fallacies, and issues of accuracy or credibility. The final two or three pages would build and substantiate a new position on the issue. Students were encouraged to think laterally and to go beyond the nutritional benefits of a vegetarian or omnivorous diet if they were inclined, and to explore environmental or moral issues; any argument was valid as long as it was relevant to the topic. As with the first paper, students peer-reviewed drafts before turning in final copies (see Appendix D).

When Essay #2 was assigned, several students expressed confusion and frustration when approaching the topic from the other side. Many had trouble grasping the idea of writing against their own belief, or how to frame something which was essentially "lying." It was the first time most of them had written something like this, an essay which directly contradicted their existing bias. In response to a large number of submissions expressing this concern, Ms. Martinez spent extra time in class and further developed the instructions. She designed a mini-unit on how to create a direct counterargument which involved coaching them on:

- Introduction and thesis revision, with example paragraphs and topic sentences
- Guidance on claim refutation and logical evaluation
- Organization and voice
- Strategy for approaching an issue you don't agree with

To avoid any influence on performance, I did not approach the class with the study until after Essay #2 was completed and returned. Students were not told of the study at any time

before both essays were completed and returned with grades. They were then informed of the purpose of the study: to determine whether additional high-level thinking skills were engaged in the second essay, in which they were forced to challenge their own ideas, than in the first. After obtaining student consent, I asked them to complete a six question survey, with four Likert Scale questions and two open-ended questions to evaluate their impression of the project (See Appendix E). The questions focused on: the level of brainstorming complexity to problem solve, whether the second essay required more careful thought and planning than the first, whether their view on the topic of vegetarianism changed after the two assignments, and how their approach to the two papers differed. The purpose of the survey was to ascertain how the students perceived their own progress on the topic both as writers and thinkers. They were informed that they could submit survey answers anonymously, but if they were willing to submit their essays to be used in the study they should include their names on the survey consent form. If they participated, they were assured that their work would be submitted anonymously and that any work that was cited in the study would remain anonymous. Twenty-three of twenty-six students in the course submitted a survey; of those, sixteen agreed to submit their work for evaluation.

The surveys would provide insight into the students' perceived benefit. To determine if students truly engaged additional higher-level thinking skills in the second assignment, the essays would need to be coded to determine progress. The challenge was how to determine what constituted critical thinking in a rubric that could be reliably used to track the existence of these elements in both essays. Breyer's ten criteria for critical thinking seemed a fitting gauge to examine student writing, though the subtle differences between some of the criteria made taking a broader view more pragmatic. I determined that a more compact model, with three primary

tenets of higher thought agreed upon by most critical thinking scholars, would be effective method of coding. These were:

1. Clear argument focused on examining ideas for their strength and legitimacy.
2. Logical analysis expressing a complex evaluation of the topic.
3. Synthesis of evidence into their existing epistemology for new concept formation.

The existence of one or more of these elements in one or more claims or arguments in a student essay would constitute the presence of that element of critical thinking.

Ms. Martinez and I performed the coding in tandem, and shared our results on each set of papers, ultimately reaching consensus on each. First, we looked for examples of idea comprehension and the ability to evaluate them for veracity and legitimacy. Often, students simply restated arguments from the in-class reading or their own research. When they were able to go a step further and point out flaws in arguments they read, or extend an idea to fit appropriately with their contentions, we marked the coded the paper with a "1." Some papers manifested multiple examples, and as the most basic of the three, "1" was the most common.

Next, we coded for logical analysis and complex evaluation of the topic. Specifically, we were looking for a student to examine an argument or claim and build on it using reason and complex analysis. It was not enough to simply extend an argument they had read; only when they made leaps in idea formation that were clearly their own did we consider the paper worthy of having the "2" distinction. In every case but one, students receiving a "2" had also received a "1," indicating that properly evaluating evidence was most often a prerequisite of logical analysis and idea extension. Fewer examples of "2" appeared than "1."

Finally, we coded for synthesis, which is the most complex critical thinking indicator of the three and in this study the rarest to appear. Students whose papers received the "3"

distinction not only showed examples of strong argument comprehension and evaluation and/or logical analysis, but were able to connect concepts successfully into their own worldview, bringing about ideas that were a hybrid of others' and their own. These examples were often accompanied by personal statements using the word "I" and demonstrated a level of reflection which indicated complex evaluation.

IV. Results: Critical Thinking Elements in Two Essays

Research Coding

Both Ms. Martinez and I found the coding challenging. Examining papers for each of the three critical thinking elements required careful analysis. After coding them separately, we compared results, finding them consistent in about 80% of the essays. For those in which we found discrepancy, we examined the essays together until we reached consensus as to the presence or absence of critical thought signposts.

What was most challenging was establishing a concrete definition for each of the three critical thinking elements. Coding for “1,” evidence and argument evaluation, proved easiest of the three. More difficult was distinguishing between “2” and “3.” When students employed logic, it was easy to mistake it for synthesis as many logical arguments displayed an element of personal voice that was often lacking throughout the papers, especially in the first essays. Ultimately, we determined that it was only when a true hybrid of external and internal ideas manifested that an argument or passage could be labeled a “3.”

In Essay #1, students generally built their arguments based on what they had believed about vegetarianism coming into the class. They searched for ideas that proved what they knew, and usually led each paragraph with some piece of evidence, after which they announced their support for the argument. Arguments, especially those which were pro-omnivorous, were often accompanied by defensiveness, as if they were defending their position against the judgment from the other side, or populated with rhetorical questions such as in this example from Student I: "Emotionally, many people simply love the taste of meat. So why get rid of something that

many people love in the first place? . . . Also, God himself gave us meat to eat. Do you really want to turn away what God has given us?"

Occasionally, as above, students would mention examples of arguments from the opposition, but these were often given as anecdotal and seldom examined critically.

Table 1 outlines the instances of the three signposts of critical thinking in each of the participating student's Essay #1.

Table 1
Essay #1 Coding Results

Student	Evaluation (1)	Logic (2)	Synthesis (3)
A			
B	•		
C	•		
D	•	•	
E	•		
F	•	•	
G			
H			
I	•	•	
J			
K			
L			
M			
N			
O	•	•	
P			

When approaching Essay #1 from the perspective they held entering the class, most students exhibited limited examples of critical thinking. The most common was evaluation of evidence, though less than half of the students exhibited this skill. In most cases, they employed evidence that dovetailed well with what they believed but did little to extend their argument beyond the most basic interpretation. Their position was essentially pre-existing, and therefore little

attention was given to the veracity and legitimacy of the claims used to support it; they already believed their existing perspective was correct, and any supporting evidence was *prima facie* accurate. The writers of the articles were given almost complete credibility when they sided with the student's position.

Four of the students, one fourth of the total participating, manifested a complex and logical analysis of the topic, and in each case they had also demonstrated the ability to examine evidence critically. Most did little to attempt to explore the gray areas in the topic, and focused on the most rudimentary concepts innate to the societal debate on vegetarianism in the categories of nutrition, morality, economic concerns, and custom. The following excerpt from Student J reflects the most common analysis style:

In "What's the Beef with Meat," the article concludes, "In the US at least, livestock account for 55 per cent of soil erosion and 37 per cent pesticide use." The growing population of humans will cause an unsustainable amount of carnivore mouths to feed, which will cause our ecosystem to crash and burn.

Here the student takes statistics and applies them to a *reductio ad absurdum*, or at best slippery-slope argument, which while related to the evidence, does not demonstrate strong syllogism and indicates a limited perspective.

None of the students showed evidence of the third and highest category of critical thinking, synthesis, which is most likely a result of writing an essay which corroborated what they already knew. They had no pressing need to integrate new ideas into their worldview in order to present a strong argument. The evidence was readily available and the concept frame was pre-existing. To form an argument, the students had only to insert evidence into their belief system to present a reasonable essay. They began the essay with a perspective, supported it

throughout, and concluded with the same premise. There was little or no reason to confront their own bias, because the nature of the assignment gave them freedom to choose a side. In this concluding statement of a pro-omnivorous essay, Student N exemplifies this issue: "Many of us were raised eating meat simply because that's how it's always been and like many traditions in our culture this will continue to be a dietary habit in our country." The implication in this essay, and in several others, is that the status quo is fine and the fact that it's not likely to change serves as a legitimate argument and validation as to why eating meat is justified.

Results were greatly improved in Essay #2, in which the students offered counterarguments to their position in Essay #1 and built a new position with evidence.

Table 2
Essay #2 Coding Results

Student	Evaluation (1)	Logic (2)	Synthesis (3)
A	•		•
B	•		
C	•		•
D	•	•	•
E	•	•	•
F	•	•	•
G			
H		•	•
I	•	•	
J	•	•	
K	•		•
L	•	•	
M	•	•	
N	•	•	
O	•	•	•
P	•		

Fifteen of sixteen students showed improvement by demonstrating more critical thinking elements in the second essay. The number of students who employed signpost "1," evidence evaluation, doubled from seven to fourteen. They were much more inclined in the second essay

to evaluate the implications behind claims they had made in their first paper. For example, in refuting his own original argument, Student D observed, “So while my original claim that this lifestyle would increase costs due to the need of supplements was technically correct, the amount it cost is so low that if you are in a situation to be able to make the switch, this would be a minimal problem.” The nature of the assignment required that students evaluate each quote and contention they had originally espoused, and the most common improvement was how they had applied that evidence, often finding holes in data or in how they interpreted it.

Students were also much more likely to employ logic to support their claims in the second essay. The first assignment produced four essays that indicated logical thought; the second produced ten. The reason for this seemed to be students’ greater comfort with using their own words, rather than the words of others. When they were quoting their sources in the first essay, they more or less restated the point and agreed. In the second essay, faced with challenging their own reason, they were more compelled to rely on logic as an aid. Student E, a staunch vegetarian, struggled with justifying the consumption of meat in her second essay. But she found counterarguments by engaging logic in observations like the following. Examining the viability of expensive meat-substitutes, she noted:

[Meat substitutes] are normally a lot more expensive than real meat, which is why vegetarianism has been described as a "first world luxury." I’m lucky to have to choice to follow a vegetarian lifestyle, but it isn’t realistic to believe that anyone can do it. If you only had just enough money to last you through the week and you had to choose between a \$5 box of veggie burgers and a \$4 package of ground beef, the choice is obvious.

Here, logic is her counterpoint; she acknowledges a real-world issue and how it affects those of a different economic situation. Though she struggled to assume a posture of true defense for an omnivorous diet, she nevertheless employed more critical thinking techniques than she had in Essay #1.

After evaluating the first group of essays, there was some concern that synthesis would be lacking throughout the project. Yet eight of the submissions for Essay #2 contained elements of synthesis, in which students demonstrated the ability to internalize an argument and make it something of their own. Some of these were difficult to evaluate; in multiple cases, students made flip-flop statements that indicated that their position had changed on the topic, such as student N when she stated: “At first, I agreed with eating meat and thought it was the healthier choice, but now I decided that being a vegetarian is better for your overall health.” We did not consider these statements as examples of synthesis, as it would be simple to make such a statement with nothing behind it for the sake of the assignment. We instead were looking for something more complex, in which a student shows idea formation, as in this observation by Student D, offering a counter to his previous argument of the economic and environmental harm of abandoning the multi-billion dollar meat industry:

There is always money moving around . . . Things will just keep moving, the empty factories of meat processing plants replaced by meat substitute companies, the massive feed lots in other places replaced by forest or grassland or some other idea like that, which can help the environment (not hurt it), and us.

Though not as eloquently expressed as some of the other arguments in his essay, it is the most original, and the reader can observe the concept formation in the worldview of the writer as he grasps some of the nuances of shifting industry. It is an idea that can now serve the student the

next time he considers the problems of industrial migration, and was only synthesized because he was forced to confront a preexisting notion which was based on incomplete information.

Examining the charts side by side, a consistent trend is clear.

Table 3

Essay #1 and #2 Comparative Results

Student	Essay #1				Essay #2		
	Evaluation (1)	Logic (2)	Synthesis (3)		Evaluation (1)	Logic (2)	Synthesis (3)
A					•		•
B	•				•		
C	•				•		•
D	•	•			•	•	•
E	•				•	•	•
F	•	•			•	•	•
G							
H						•	•
I	•	•			•	•	
J					•	•	
K					•		•
L					•	•	
M					•	•	
N					•	•	
O	•	•			•	•	•
P					•		

With the exception of students B and G, who showed no change, every student demonstrated an increase in critical thinking from the first essay to the second. Of the students who manifested no elements of critical thinking in Essay #1, all but one were able to improve and achieve at least one of the three in Essay #2, and seven of sixteen to achieve two of the three. Of the four students that exhibited both Evaluation (1) and Logic (2) in the first essay, three were able to improve and incorporate Synthesis (3) in the second.

Case Studies

In order to examine more closely the effect the assignment had on critical thinking, I chose to do case studies on three students and their progress over the two essays. Students K, H, and O were selected for the study based on their growth and response to the project.

Kirk

Student K, who I'll refer to as Kirk, began with a pro-meat stance on the topic. "The thing I noticed is that there is not one common cause that unites all vegetarians. Consequently, all vegetarians face some major hassles and health problems that should make them question their choice to not eat meat," he states in the opening paragraph of Essay #1. Kirk's analysis of the topic remains rudimentary throughout the essay. Both Ms. Martinez and I scored the essay as lacking in any of the components of critical thinking, though from our perspective it was not poorly written. Kirk simply attached evidence to his existing worldview; it didn't require a great deal of complex thought. Consequently, he reached a conclusion that is lacking in deep analysis:

How can someone say it isn't ethical to eat meat when clearly it isn't ethical to mistreat your body by depriving it of the essential nutrients you need. For most people, the draw of meat is powerful, and natural. After digging deeper into the adverse effects of vegetarianism, I think just about anyone can justify their decision to eat meat.

His essay shows that he did the appropriate reading and research, but also that his perspective was not enhanced by crafting the argument.

In his second essay, we found that in challenging his existing arguments, he was able to engage improved techniques in evidence evaluation and synthesis. Addressing his earlier argument that vegetarianism is unfeasible, he states:

This argument turned out to be hard for me to justify, mainly because it is an assumption that can't be proved. I could say that vegetarian foods are gross and expensive, but that too is an assumption. By simply going online you can quickly find thousands of vegetarian recipes. . . I can also add onto this argument by sharing some common knowledge that meat itself is consistently quite expensive. So how can someone who is against vegetarianism sit there and make judgments assuming vegetarian diets are a hassle when they have never taken the time to try it?

While his writing style here incorporates colloquialisms and a rhetorical question, Kirk still manages to broaden his perspective and directly confront his own judgment, admitting that his initial perspective was based on a lack of knowledge. These issues did not hold intellectual weight with him until he was forced to defend them in writing. In addition, his presence on the page is more dynamic, showing a more balanced approach.

More than any other student, Kirk addressed his first essay directly, making claims in response to his own thought processes at the time, outlining his internal monologue while writing. When confronting the viability of using supplements to enhance the vegetarian diet, he observes:

I practically disregarded the thought of a vegetarian taking supplements in my initial argument. The truth is that dietary supplements can be an easy way to get all the nutrients you may miss out on. A few quick and easy pills can solve the problem that I originally placed so much emphasis on.

After examining evidence more closely, he realized that his first reaction to the issue was uninformed, and that he had placed inappropriate weight on the evidence he had read. When

encountering new evidence in the context of making a counterargument, he was forced to balance it against what he had previously believed. He is probably oversimplifying the issue with a statement like "A few quick and easy pills," but nevertheless he clearly shows that he is absorbing the information and creating his own argument.

Perhaps the greatest example of synthesis in his second essay comes when he confronts the ethical issue surrounding the topic. Though he is not a vegetarian, he attempts a sympathetic position:

From a vegetarian standpoint, eating meat seems almost selfish, to slaughter another animal for no reason other than the temporary satisfaction of eating it. Despite attempts to make slaughter humane by techniques such as kosher, most vegetarians still look at the process with abhorrence. To carry out such inhumane acts on animals for the foolish pleasure of enjoying the taste, almost gives society the image of having a lack of self-control.

His self-control observation represents one of the most original pro-vegetarian insights from any of the essays, including those from vegetarians in Essay #1, which is particularly notable because he supports an omnivorous diet.

Kirk's growth between Essay #1 and Essay #2 was among the most significant of any student. His second essay proves that he is capable of incorporating higher levels of thinking if the assignment facilitates it, though his first essay indicates that he will rely on very narrow judgments if it does not. On the survey, Kirk agreed strongly that the second essay required more careful thought and planning than the first. He also stated,

Essay 1 required a lot less critical thinking, as I mainly expressed my own beliefs, and that made the research easier. Essay 2, however, was more difficult for me

because I was doing research on something I didn't agree with. I had to go back to the basics of rhetorical arguments in order to form my new opinion.

It seems that this strategy served him well; by approaching the assignment rhetorically, he was more inclined toward objectivity and reduced bias. It facilitated an essay that showed improved reason and critical thought.

Ophelia

For ease of reference, student O will be referred to as "Ophelia." In her first essay, Ophelia took the position that vegetarianism is the better choice of the two lifestyles, providing that the vegetarian pay close attention to diet. In a sense, her paper was not as argumentative as others; she surveys several key issues on the topic as discussed in class, and indicates that "All of these are definitive arguments, valid for both sides." Indeed, even after making a case for vegetarianism, she concludes her essay with the final statement: "All in all, the choice is free among us and both can be achieved in a healthy way." She seems unwilling to take any sort of position at all, simply presenting information and attempting to be unbiased. Ostensibly this commitment to neutrality is an indicator of critical thinking. But looking more deeply into the work, it seems she is unwilling to make a claim because she is not confident in her own ideas.

Her first essay is not without instances of critical thought; in fact it was one of only four which received a "1" and "2." When examining the need for vegetarians to supplement their diet, she deftly observes that "because there are fixes to the nutrients not being supplied by the meat, a vegetarian may actually have a healthier diet. They do not simply rely on meat to supply the proper daily proportions, but create a diet that they know will meet those requirements." Her analysis demonstrates that she is applying logic and evaluation to the evidence and extending the idea into a potential positive consequence for the vegetarian. She goes on to say that "A

vegetarian has more incentive to consume food with less fat and cholesterol, thus leading to a more cautious diet consisting of food high in vitamins and fiber rather than empty calories. This is because they are aware that they must correct their diet for the lack of meat." While this is a reach logically, it represents more complex argument formation than most other essays in the study. She is thinking, rather than simply restating arguments she read in her own words.

This passage is, however, the only time Ophelia is able to achieve that level of analysis. The remaining arguments are restatements, and her conclusion is noncommittal. Despite being one of the few students demonstrating logical analysis, Ophelia's was the only of the first essays which failed to hold a concrete position. She never connects herself to the arguments, and as a result she is unable to take a true stand on vegetarianism, though she chose the side herself.

In Essay #2, she became much more involved with the topic. "Both sides can be argued, but there's a reason why this is the popular vote. My goal is to reveal the reason behind this," she states before diving into the issues. In her first essay, she relied on the apparent ease of effectively supplementing a vegetarian diet, but when faced with the massive struggle she learned many vegetarians face, she shifts perspective: "I now think that I hadn't analyzed the struggles fully and underestimated the costs." She addresses the appeal (or lack thereof) of the diet restriction, concluding that there can be issues with the satisfaction of the vegetarian, and she also attacks the over-priced nature of plant-based foods which, based on the relative cost of their ingredients, appear unnaturally inflated only because of their "health food" distinction.

In addition, she for the first time brings synthesis into her essay when she confronts the pragmatic efficacy of the vegetarian lifestyle. She observes:

It sounds lazy to say that eating healthy is such an effort, but that's because we omnivores don't really think about it. That's the glory of meat. It provides us with

nutrition that we don't even know we get from it, nonetheless, need. Maybe I just don't think enough about what I eat and you might know more about the nutritional value of meat than I do, but I had to look it up.

Here she is reaching the realization that there are issues running beneath all those in the journals that directly affect her, prompting her to explore further. Ultimately, she reaches the conclusion that "Vegetarianism requires more money, time and effort with fewer options of what to pile their plates with. This is not the ideal diet for the average person." Her ability to address her initial argument to understand the consequences of vegetarianism for others represents a strong move toward more potent thinking.

The difference between her two papers is striking. Ophelia goes from passively one-note and noncommittal, to dynamically seeking answers and taking a stand, all while incorporating strong logical reasoning and complex idea formation. The difference in tone between the two papers alone is significant. While writing the standard argumentative essay, though she shows traces of logical reasoning, she is unable to engage them in any meaningful way, producing a flat essay that's aim seems to be to please all or to offend none. But when tasked with tearing it down, she attacked the second essay unfettered and armed with excellent thinking tools and a desire to gain knowledge.

In her survey, Ophelia agreed that the second essay required more careful thought and planning, and commented that the assignment "brought me one step closer to learning how to rhetorically analyze a piece. It also taught me how to be more open minded to controversial issues."

Helen

Of all those participating in the study, student H, or Helen as I will refer to her, approached the project from the most personal perspective in terms of argument development. Her first essay was for an omnivorous diet, and while she did reference Upton Sinclair's *The Jungle* to illustrate the problems with the meat processing industry, ultimately she decides that these issues no longer plague us as a society: "It would be easy to be so appalled by the objectionable practices of how mass production of meat products are handled as to not to want to eat them. Fortunately, nowadays, government organizations were formed to oversee proper practices to insure public health and safety." She goes on to address other ethical issues surrounding meat-consumption, including religious concerns and the very nature of killing another living thing to consume it. In perhaps the most significant passage of her first essay, she observes:

As an animal lover I know it is hard to look at meat and think that it came from a living breathing animal. Then again cattle are not raised as pets. In our society what would be considered a pet is a serious taboo to eat, such as dogs, cats, and horses. The animals we eat are not ones that are given a name and share our homes with us. I don't know about you, but I would not be okay with sharing my bed with a cow, I would rather have my big fluffy husky.

Helen makes the choice to categorize farming and herd animals as something less sentient than a companion pet, because we name them. Of course, the assumption is that no one names cows or pigs, though she doesn't address the potential contradiction. It is of note that she considers herself an animal lover; in her mind there is a sharp dichotomy between an "animal" and "meat." She ultimately rejects the ethical question surrounding the meat industry, concluding that "The fact that we eat farm animals should not play on ethical standing because rather the meat is

raised in a pasture or in a meat-house, it comes down to the fact that the animal is being raised to be slaughtered."

In this study, Helen's position is among the most extreme examples of personal belief clouding rational judgment; seldom did the refusal to acknowledge any concern for the treatment of the animals surface as it did here. This is in part a result of the assignment, as nothing in the nature of it (or how she interpreted it) led her to examine these beliefs on a more fundamental level, and as a result she produced a paper that both Ms. Martinez and I determined was lacking any instance of critical thinking. In fact, it's possible that the first paper served to reinforce her already one-sided view on the treatment of animals as she defended it.

In her second essay, she was forced to confront this position, and maintained a high level of personal engagement, but this time drew upon a more sympathetic premise. She encountered a practice called tail-docking and had this response:

This very painful procedure is the 'cutting off of two thirds of the cow's tail, without anesthesia, to help with infection from being constantly exposed to manure.' Just like horses, cows use their tails to swat away flies so without their tail more flies will be able to cause the cow discomfort. If I accidentally step on my dog's tail she yelps, so I can't imagine how the cows feel when theirs is cut off!

Here, Helen relates what she's researching to her own experience in order to gain context. By comparing the cow to a horse (which she previously referred to as a "pet" animal) she is able to gain a level of sympathy for the plight of cattle; she also brings in her connection with her dog to gain perspective. She is able to make a logical conclusion from this information as well, noting,

"The alterations we do to these cows make them seem more like factory machines than actual animals." This represents one of the most cogent arguments she makes in either paper.

Helen continues using the strategy of using her own experiences to craft counterarguments. In responding to her statement in Essay #1 that cattle do not occupy the same status level as pets, she makes this very personal observation:

Although we don't keep these animals in our homes, once I looked further I noticed that they still hold a high standing in society. . . . As early as I can remember my parents would read story books to me before bed, and these impressionable moments helped shaped how I view the world around me. The majority of books that are read by children give human characteristics to animals. These books range from *Gus the Firefly* to *Charlotte's Web*. These books help teach young people how to live with one another, problem solve, social morals, and quality personal traits. These ideals are brought to light through the voices of animals. Is it no wonder we should have compassion for the very things that shaped our views of the world. It has trained us to extend human compassion to all living things, and it is disturbing to me when that compassion falls short on the food that sustains us.

It's a very long passage, but it's hard to overstate the significance of this observation, both as it relates to the student and to the study as a whole. It is an excellent example of synthesis, as she has taken the concept of the ethical treatment of animals and brought it into her worldview through the lens of childhood experiences. She confronts her original argument, that cattle are lesser than pets, with logic by observing their standing in literature and their usefulness in teaching lessons to children. More significantly, she extends this argument with the realization

that these lessons are often aimed at granting the compassion we normally reserve for humans to all living creatures, and that we are often falling short of that compassion in the meat-processing industry. Helen's argument was one of the most unique in all the essays; most students worked within the confines of the most standard issues surrounding the assigned articles. As a result of confronting what had been one of the most narrow viewpoints in Essay #1, she was able to create what was one of the most intriguing and original in Essay #2.

Helen, as I am sure is the case with all of the students in the study, did not choose to change her diet as a result of the essay. But she made one of the most genuine statements in her conclusion: "My previous essay didn't dive into the actual living conditions of the animals as much as it should have or I would have taken the opposite side. I'm not saying I won't eat meat, because it is just part of my routine now, but I will think twice when I do." She was not the only student to make such an observation. But in her case, given the progress she made from the first to the second essay, this seems as though it might have been the most authentic.

Survey Responses

Twenty-three of the twenty-six students in the class chose to complete the survey. The first four questions employed a Likert scale with the choices Strongly Agree, Agree, Somewhat Disagree, and Strongly Disagree. The final two were open-response. The questions were designed to gauge students' reactions to the assignment and its effect, if any, on their critical thinking skills. It was also meant to show some insight into their existing belief patterns and whether the assignments had any influence on them.

Question #1: "I found that this assignment required advanced brainstorming and idea development."

Strongly Agree	Agree	Somewhat Disagree	Strongly Disagree
13	9	1	0

Question #1 Results

This question was meant to determine students' overall impression of the assignment. Most students agreed that the pair of essays was a challenging exercise. The single student who disagreed still strongly agreed with the second question, that the second essay was more challenging than the first. In addition, in the comments this student left in one open response question, he mentioned that the assignment had been a month before, and he couldn't remember. He also did not submit his work for evaluation.

Question #2: "I found that Analytical Essay #2, in which I developed counter-arguments to my initial position, required more careful thought and planning than Analytical Essay #1."

Strongly Agree	Agree	Somewhat Disagree	Strongly Disagree
19	4	0	0

Question #2 Results

This question elicited the most homogenous response, with the class overwhelmingly agreeing that the counterargument essay was the more challenging of the two. This corroborates Ms. Martinez's report that many students approached her before and during class to ask for help with Essay #2. It was clear that it was the first time that many of the students had attempted an assignment in which they not only had to formulate a counterargument essay, but also address their own existing ideas. As mentioned previously, many students expressed a sense that they were being dishonest or lying, and this caused them concern. Ms. Martinez made a point to

assure them that the exercise, while it might lead them to write something that they did not entirely agree with, was not in way meant to cause them to feel as though they were being inauthentic; it was simply to practice looking at a topic from multiple angles. She even encouraged them to have fun with the assignment, as hopping to the other side of an argument isn't something they would get to do often. Regardless, a few students made a point to carefully hedge their essays to clarify that while they were crafting an argument, that it was not fully in keeping with their personal beliefs. We found that students with this tendency still improved in their critical thinking skills from the first to the second essay.

Question #3: "In crafting Analytical Essay #2, I found myself writing in opposition to my own beliefs."

Strongly Agree	Agree	Somewhat Disagree	Strongly Disagree
14	5	4	0

Question #3 Results

Given the nature of the assignment, it is surprising that four students disagreed with the premise of the third question. Given that they were asked to defend that position that they personally held when writing Essay #1, it would follow that the rebuttal essay would require that they write in opposition to their own beliefs. There are a few likely reasons for the discrepancy here. One is that they misread the question or coded the answer in error. Another is that they had a moderate stance on the topic, and thus did not feel strongly one way or another, or that they deliberately chose a side that they didn't believe the first time. We chose vegetarianism (which everyone has some bias for or against) as the topic and concealed the nature of the second essay to avoid anyone leaving their existing predilection for the counter-essay. It's also possible that students might have chosen a position in opposition to their own belief because they found

the evidence more abundant or compelling, or that in an academic setting that existing bias toward one side (likely vegetarianism) might make it a better choice. Ms. Martinez actually noted that one student mentioned that she chose to defend vegetarianism in her first essay despite a personal pro-meat bias, simply because it seemed like the easier paper. Finally, it could be that examining evidence and brainstorming for the second essay helped to reduce personal bias before the actual writing process.

Question #4: "My overall opinion on the issue of a vegetarian vs. an omnivorous diet changed after completing Essay #2."

Strongly Agree	Agree	Somewhat Disagree	Strongly Disagree
0	1	16	6

Question #4 Results

It's not surprising that only one student's opinion changed on the topic; with something as lifestyle-specific as vegetarianism, two essays would not likely be compelling enough to make an extraordinary impact. The purpose of the essay was not to change their minds, but to give them practice challenging their existing bias and examining both sides of an issue. The bulk of the participants fell into the Somewhat Disagree category, which seems to indicate that at least some change, if minimal, came about in almost three-fourths of the participants. A modicum of change is still change, and any exercise that broadens perspective is valuable.

More importantly, it signals that there is little danger of creating any personal crisis in assignments that require students to face their own biases. Change is small, but it happens over time and with repetition. It, of course, should not be the goal of any academic assignment to change students' minds, but rather to provide the opportunity for change.

Question #5: Describe, in terms of your brainstorming and thought processes, how your approach to Essay #2 differed from Essay #1, if at all.

This question was designed to prompt them to comment on their pre-writing process. Most students expressed a great deal of challenge in this response. Several students commented on the amount of research they had to do to support a position they were not familiar with. One student observed: "For Essay 2 I realized I had to do a lot more research. I knew the typical thoughts of both topics but needed research to go more in depth. I found the second essay to be much more difficult." Another responded, "Essay #2 required more research for ideas than Essay #1. I also needed to construct a new way to present my ideas because I was arguing about my own writing."

Comments on arguing against their own ideas were the most common. One student expressed this succinctly: "It was tough because it required me to write against my original belief. It was harder to brainstorm because you needed to find loop-holes in your own belief." A few commented on the challenge of seeing things through another's eyes: "In Essay 2, I had to have an open mind because I was writing about a lifestyle and diet I have never tried or experienced." Another observed, "I had to think about more ideas to write about in Essay 2. I also had to think like the opposing view to write about it." They seemed to be very aware of the challenges of placing themselves on the other side of the debate.

Two students, among those with the strongest beliefs, found the second essay particularly challenging. One commented, "The idea was different than my belief, so I had to find points that were shocking to me or points that would grab my interest or possibly change my mind if I was the reader." And another admitted, "The points I argued for in Essay 2 weren't that persuasive to me, so it was very challenging especially since I'm a vegetarian."

Though most agreed that the second offered more obstacles, three students stated that there was no change between the two, and one offered a dissenting opinion, stating that "In the second essay I didn't have to brainstorm as much because I just used counter arguments of my first essays topics and only formed a few more ideas."

I was pleased that the majority offered well thought-out responses. Most students expressed difficulty in some aspect of the second essay, with the common theme that generating ideas and researching a topic that they disagreed with complicated their progress. It forced them to find "loop-holes" in their thinking, and explore ideas of audience awareness by changing their approach.

Question #6: What different writing or argument development techniques did you employ for Essay 2?

This question was meant to prompt them to consider the challenges of actually writing the second essay. Most student responses focused on the challenges of writing in opposition to their own thoughts, and a few mentioned consulting the unit from the textbook on argument formation. Student D noted, "I had to be much more by-the-book in my arrangement or setup of arguments as I had trouble letting my own voice as a writer speak out due to its contradiction." This particular student, in spite of his difficulty, showed improvement and incorporated synthesis into his second essay where it was lacking in the first.

Many observed that it was a valuable skill to be able to critique their own ideas. One stated, "I learned how to form research on ideas even if I did not personally agree with it. I believe it made you think a lot harder because you didn't necessarily believe what you were writing." One noted, "The use of counter-arguments is something that is crucial that I never did prior to English 1101." Another observed, "I had to think outside the box and brainstorm ideas.

It was harder for me to relate to this because my Essay #1 was about what I believed in."

Another agreed that the difficulty in perspective change was valuable, noting the benefit "To be able to view things from a different viewpoint even if it is uncomfortable for me."

One student addressed the issue of audience surrounding the topic, and how taking the opposing view required her to confront it, stating "For Essay #2 I did a lot more research than Essay #1 because I didn't know it as well. I had to make sure my arguments weren't rude in any way towards my opposing view." Though not a focus of this study, the comment shows an increase in audience awareness from the first paper to the second; the change in perspective resulted in the student automatically placing more focus on how ideas would be received by the reader.

A few mentioned overcoming personal bias as a particular hurdle. One student, a proclaimed meat-lover, approached the challenge with this strategy: "I had to temporarily convince myself I was actually vegetarian." The before mentioned Student F, a staunch vegetarian that, while writing strong essays, could not entirely change perspectives for the counterargument, addressed personal bias in her response. Commenting on her writing process in Essay #2, she wrote, "I stated that my previous essay was biased and some of the points I had made, while true, did not cover the whole topic, allowing the reader to see that while I had believed in the one thing, I found points strong enough to change my mind (in the essay only, not really)." Ultimately, the second essay had no real influence on her perspective, but it made her address some of the holes in her first, thus bolstering her original position. As a result confronting her bias, she ostensibly became a better educated vegetarian.

IV. Conclusions

Examining the improvement between the two papers and the student responses, it seems clear that Essay #2 was the more challenging and thought-provoking of the two, leading to greater instances of critical analysis and bias examination. While many students struggled with building arguments against their own beliefs, even those which claimed a level of discomfort with defending something they didn't agree with showed improvement on the second essay. For those students in particular, the advantage of confronting their own bias led to better synthesis and logical engagement as they challenged their own position. Despite writing against an existing belief, they nonetheless showed a greater personal presence on the page.

Of course, there was no way to ensure that students in this style of assignment would choose the side they actually believe; some students made choices based on other criteria for the first, thus were not confronting bias in the second paper. Even for these students, the nature of the second essay led to improvement in most cases, as they were still addressing an argument they made whether they believed it or not, and had the opportunity to more closely examine evidence for its veracity and contextual viability.

Perhaps the most significant result of the study was the presence of synthesis only in the second essay. Considered by many critical thinking scholars as the most complex of the thinking skills, this element of critical thought was entirely absent in the first, a standard first-year composition argumentative essay. Even though students were tasked with writing in accord with existing belief, which should have been a fitting environment for synthesis, none of them demonstrated that they had incorporated the ideas they were exploring into their existing worldview for new concept formation. Essentially, they were going through the motions of

attaching evidence and the words of others onto a thesis statement without doing a great deal of critical analysis. The assignment did not prompt them to think.

This could indicate a correlation between writing in opposition to existing bias and improved synthesis. But even students which admittedly wrote in contrast to their own belief on the first paper did not exhibit elements of synthesis. Synthesis only occurred in Essay #2, and in the lowest frequency of the three coded elements. This seems to indicate that it was the deeper exploration of the topic, both from an empirical and logical perspective, which led to increased critical thinking. In the survey, most students noted the challenge of confronting their first essay led to more research, planning, and thought than the first. It was not the topic that created the challenge, as students from both sides of the topic noted similar challenges. Neither was it whether they chose the side they were for or against in the first or second paper, though it seemed that those who truly confronted their own bias in the second essay made greater progress. It appeared rather that the process of deconstructing an existing argument and building a counter-argument was a more complex and critical-thought-intensive exercise. In addition, they appeared more engaged and challenged by the second essay, which seemed to increase their critical evaluation and awareness of the issues.

A possibility I considered in analyzing the data from the study is that the narrow and focused nature of the second essay created more opportunity for complex thought to flourish than the first. Though none of the participants specifically mentioned this, I believe that students often struggle with broad-spectrum assignments that allow a large amount of freedom for argument development. This is in part why we provided the articles for the first essay, to offer a framework of ideas that was easily digestible for the students. They were required to bring another source in, but few strayed conceptually from the ideas elucidated in the in-class readings.

The sheer volume of data on a topic is intimidating for any student who does not have a particular thought-vector for an argument paper. Of course, the only vector they had in Essay #1 was their existing bias, or what they had read in class. The second essay narrowed the scope of the topic to something very specific: the arguments they made in the first. Instead of approaching the enormity of the societal dialogue of the subject, they were limited to a few specific arguments to attack and counter. The scope of the assignment allowed them to then drill down into the issues with a very clear objective: defeat these arguments. Now the project's desired outcomes are sharp and clear, and the path to critical success is more visible and obtainable, though more challenging. They knew what a good essay looked like: one which successfully countered their first. I believe that this kind of focus fosters critical thought, as having a clear goal allows them to synthesize information and ideas in a manageable workspace. In this assignment, it also had the added advantage of using an issue on which they had already made a decision, whether consciously or not, giving them the opportunity to challenge their own reasoning.

Ultimately, I believe the project created a fertile ground for improved critical thinking. Whether students chose the side they believed or not in Essay #1, through the course of the assignment they had to at some point defend both, thus bringing their bias into question. For most, refuting their existing beliefs was a challenge that led to significant improvement. For almost every student, the nature of the second essay opened up at least some gains in critical thinking. Both the surveys and our coding indicated a powerful correlation between the counterargument essay and advanced thinking skills employed.

Vegetarianism, I believe, was a successful choice of topic for this assignment, as there was an existing bias in the students, but not so strong that they couldn't generate ideas for the

opposition. Any such topic could be used by first-year composition teachers to establish a classroom dialogue and generate a similar assignment. In this study, hand-selecting the periodicals used and leading a critical reading of the material was necessary to help ensure a strong classroom familiarity with the topic; students can't out-write their reading level. In any case, the instructor has the freedom to explore various topics and their ongoing debates to create an atmosphere that fosters strong critical thinking. Through the process of building counterarguments and confronting their existing biases, students are truly participating in the discourse on both sides, and in a position to benefit greatly as thinkers and writers if they choose to engage the assignment with fervor.

If I implemented the study again, I would likely increase the length of the first essay. The second was the longer of the two to give more room for both counterargument and new argument formation, and it may have been that the additional length of the essay created a stronger environment for critical thinking. In addition, I would be interested to see the assignment with another topic. Vegetarianism as a topic was only truly polarizing for those that had chosen the more restricted diet; omnivores are seldom passionate about being omnivores. From one perspective, I believe that the topic allowed a great deal of room for student growth in critical thinking because few of the students had strong feelings on the topic. A more polarizing and complex topic such as stem-cell research might prompt a more dramatic shift in thinking in particular students, though it may also leave students pushed too far to the right or left on the issues to make significant leaps in critical thinking. I would also like to explore a topic which is not quite so binary; the more possibilities for students to explore, the more chances to improve cognitive performance. Topics I've also considered include universal health care, the validity of ostensibly paternalistic mandates such as helmet or seat-belt laws, privacy rights of candidates

for public office, and the philosophical debate around interference in foreign affairs by the U.S. government.

I believe that FYC instructors implementing a study like this will find it very beneficial for their students, and enjoy the success of leading students to higher levels of thought. Feedback I've received from FYC instructors on the outcomes of assignments they've designed are often tinged with frustration, as students sometimes fail to grasp the underlying purpose of the work and miss the objectives. This two-part assignment requires a very hands-on approach, from leading students through all the readings to facilitating classroom discussions and teaching extensive counterargument development strategy. Though it may appear hyper-structured, I believe that the structure is a large part of its success. By the time students reach the second essay, their familiarity with the topic provides them with the necessary intellectual environment for new idea creation. The difference between the first and second essays for many students was dramatic, and the instructor reaps the reward of facilitating true improvement.

I also believe that challenging assignments like this are crucial for individual growth. Complex assignments can be difficult for FYC instructors to implement, and failures may convince them to simplify projects rather than asking too much. This study indicated that even students who displayed extremely simple analysis on the first paper were able to make leaps in critical thinking with the right kind of assignment and the proper guidance to see it through to completion. Successes of this variety, when students make a point to mention the particular difficulties they encounter, are of greater value to them than those that came at a lower cost.

Though I believe that this assignment has particular value in FYC due to the open nature of the subject matter, I would be interested in researching its efficacy in more advanced courses. The necessity of bolstering critical thinking skills across the curriculum is undeniable, and I

believe that this kind of exercise could have profound impact on students in more specialized composition classes, or even in fields such as sociology or economics. Improving students' ability to evaluate what they learn, process it with the highest levels of reason, and synthesize their findings into their worldview is a goal for every level of student. This kind of assignment could be administered to participants in almost any academic discourse community to positive effect, both in improving thinking and writing skills; better thinkers make better writers.

Students in Comp 101 have a plethora of skills they will ultimately need as they become more and more specialized in their chosen field; a single class can only deliver so many of them. But of these possibilities, perhaps the composition teacher has the chance to develop one of the most crucial. Critical thinking doesn't have a course number; classes have specific objectives, and many times these objectives are focused on learning and accepting, rather than questioning, existing theories and epistemologies in various fields. By learning the existing discourse of these fields, students gain the knowledge they need to participate, but not necessarily the tools they need to question existing paradigms to push that dialogue into new ground. Without thinking critically – evaluating evidence, logically reasoning, and synthesizing new ideas – they will never make those strides in their area of study. If we don't teach students how to do that, and give them assignments meant to exercise that kind of thinking and then to trust their own reasoning, they are left without a necessary tool to become essential members of that dialogue. First-year writing courses offer perhaps the best framework, the written essay, and the most open forum to explore ideas and produce not only better writers, but better citizens, scholars, and professionals who have the skills to change the world.

V. Appendices

Appendix A - Essay #1

Description:

For this assignment, you will work with a set topic: vegetarianism. If you'll remember, we read and discussed a number of articles that both supported and contradicted the movement toward a plant-based diet, as well as several that tried to look at the issue from a neutral or perhaps novel perspective.

Using the sources that we read as a class, as well as one **credible** source that you found on your own, you will write an argumentative essay either in favor of or arguing against the consumption of meat, dairy, and/or egg products. Remember that in order to be successful in this assignment, you'll want to adhere to the defining characteristics of argument that we've been discussing this semester, such as:

- The argument justifies its claims.
- The argument serves as both a process and a product.
- The argument combines truth-seeking and persuasion, with attention to the three appeals of argument: ethos, pathos, and logos.
- The argument notes counterclaims and refutes them in a logical manner.

Remember, while you may have strong views one way or another, you want to ensure that you don't rely entirely on pathos to make your argument. For instance, don't just talk about how it's unfair to eat something that can't defend itself without first proposing your definition of "fairness" and the ability to defend oneself.

Format and Requirements:

- Times New Roman or Arial font
- 2-3 pages, double-spaced
- 12 point font
- One inch margins
- Last name and page number in upper right hand corner of the page
- Title

Appendix B - Peer Review Guide, Essay 1

<p>In this column, you'll find the questions that I'll be asking about each part of the essay. You can use them as prompts for responding to your peer's work.</p>	<p>Use the spaces below to respond to your writer's work clearly and thoroughly. Remember, don't just answer "yes" or "no"—give your writer details! If you need more space, you can adjust the size of the boxes!</p>
<p>Introduction: Does the writer draw you in with an interesting hook? Does the writer give you (the reader) a good sense of where things are going?</p>	<p>Introduction:</p>
<p>Thesis: What is your writer's argument? Is it just a statement, or is it a specific position on that statement? Does the thesis serve as a guidepost for the essay itself?</p>	<p>Thesis:</p>
<p>Evidence: Does your writer use at least one source from the class readings and one credible outside source? Where is the evidence used most effectively?</p>	<p>Evidence:</p>
<p>Organization: In your writer's essay, does each idea move smoothly to the next? Are there clear and effective transitions between paragraphs? Do you see places where two paragraphs could be brought together, or where one paragraph could be split into multiple sections for clarity?</p>	<p>Organization:</p>
<p>Voice and Style: Does your writer adopt an appropriate style for the audience at stake? Is your writer aware of diction and syntax?</p>	<p>Voice and Style:</p>
<p>MLA: For this, you'll want to pull out your <i>Writer's Reference</i>. Does the writer use in-text citations properly? Does the writer effectively introduce quotes and place them within the context of his or her essay? Is the Works Cited page formatted correctly?</p>	<p>MLA:</p>

<p>What else?</p> <p>Now that you've covered the main points that we've discussed in class, is there anything else that stands out about this essay? Did the writer try to cover too much information in too short a space? Did you think that a particular piece of evidence worked well? Here's your chance to point out anything else that you noted, good or bad.</p>	<p>What else?</p>
--	-------------------

Appendix C - Essay #2

Description:

In this assignment, you are being asked to take the previous analytical essay and respond to the arguments that you set forth. If you argued that vegetarianism was preferable to an omnivorous lifestyle in the first essay, you will need to adopt the opposite standpoint. In doing so, you will need to respond **directly** to your previous essay. In addition to addressing the premises for your initial argument (i.e., vegetarianism is better for the environment), you will want to expand and address other possible counterarguments.

Your initial essay consisted of approximately 2-3 pages; in this assignment, you will want to write a 4-5 page response—you may, however, choose to reuse some of your initial work. For instance, if you want to take some of your original text discussing the environmental impact of vegetarianism, you are welcome to do so. But be careful: if you simply drop your original writing without any regard for context, chances are that your argument will be ineffective. In order to help guide your thinking, you might want to construct in this manner:

- Introduce your new perspective. If you originally wrote on the nutritional inadequacy of a vegetarian diet, you would want to start off stating that you are going to argue the opposite.
- The first one to two pages of this essay will consist of a response to **your** original argument. What logical inconsistencies did you find in your own work? Fallacies? Issues of accuracy?
- The final two pages will build and substantiate your new position on the issue. You may go beyond the nutritional benefits of a vegetarian or omnivorous diet, and perhaps explore the environmental or moral issues.

Format and Requirements:

- MLA format, stapled in top left hand corner
- Times New Roman or Arial font
- 4-5 **full** pages, double-spaced
- Three properly cited sources
- Title

An A paper will:

- Display a clear awareness of audience
- Present a unique perspective on the chosen issue
- Maintain a professional tone
- Respond directly to your original essay
- Contain a minimum of grammatical surface errors

Appendix D - Peer Review Guide, Essay 2

<p>Here, you'll find questions about various elements of the essay to prompt your thinking and help you respond thoroughly to your peers.</p>	<p>Use this side to fill in responses to your peer writer's work. The boxes automatically expand, so don't worry about space! When responding to your peer, be sure to provide direct examples from his or her text that demonstrate your claims about the essay.</p>
<p>Introduction and thesis: How does the introduction grab your attention as a reader? What kind of tone does the introduction set for the paper?</p> <p>What is the thesis? Does the thesis serve as a guidepost for the essay? <i>(After you've read the essay, come back to this one: did the essay itself follow from the thesis, or did the writer stray from it? How might your writer remedy this?)</i></p>	
<p>Body, Part 1 (Rebuttal): Does the writer directly address his or her own original argument? How does he or she do this? (Direct contradiction of claim, introduction of new or missing evidence, question a logical inconsistency or fallacy) Is the writer's new position clear throughout this rebuttal?</p>	
<p>Body, Part 2 (New Position): If the writer chooses to discuss another point in his or her new argument, how does it connect to the rebuttal? Is it part of a large, overarching thesis, and does the writer clearly transition from the rebuttal to the new position?</p> <p>If the writer chooses to rebut his or her own essay for the entirety of the paper, you will want to check for organization.</p>	
<p>Organization: Does your writer's thesis run through the entire essay, or does he or she stray from it at any point? Do the transitions help you move from one idea (or paragraph) to the next, or do you find yourself making mental leaps to follow</p>	

<p>your writer?</p> <p>On a paragraph level, does your writer discuss multiple, separate ideas in one paragraph? Are there any places where you might break up the ideas for the sake of clarity?</p> <p>Voice: Does your writer's voice and argument stand out in the essay, or is he or she buried by sources? Is the writer using sources to finish sentences or state his or her claims, or are quotes used simply used for support?</p>	
<p>Evidence: Does your writer properly introduce the sources in his or her paper? (Does the writer introduce the author of the source and the context of the publication?) After the quote is introduced, does the author then relate it back to his or her main claim? (If your writer simply says, "I agree with so and so," and moves on, you will want to circle it.) Are the sources credible? Do you see any possibility of bias?</p>	
<p>MLA: Take a look at your writer's in-text citations, paper format, and works cited page. (Be sure to have a Writer's Reference handy for this one.)</p>	
<p>Anything else? Use this box to discuss anything else that you noticed that didn't fit into the categories above.</p>	

Appendix E - Survey

Two-Part Argumentative Assignment Survey and Consent (Vegetarianism):

1. I found that this assignment required advanced brainstorming and idea development.
☐ Strongly Agree ☐ Agree ☐ Somewhat Disagree ☐ Strongly Disagree

2. I found that Analytical Essay 2, in which I developed counter-arguments to my initial position, required more careful thought and planning than Analytical Essay 1.
☐ Strongly Agree ☐ Agree ☐ Somewhat Disagree ☐ Strongly Disagree

3. In crafting Analytical Essay 2, I found myself writing in opposition to my own beliefs.
☐ Strongly Agree ☐ Agree ☐ Somewhat Disagree ☐ Strongly Disagree

4. My overall opinion on the issue of a vegetarian vs. an omnivorous diet changed after completing the Essay 2.
☐ Strongly Agree ☐ Agree ☐ Somewhat Disagree ☐ Strongly Disagree

5. Describe, in terms of your brainstorming and thought processes, how your approach to the Essay 2 differed from Essay 1, if at all.

6. What different writing or argument development techniques did you employ for Essay 2?

Name (Please Print): _____

At the time of this survey, I am 18 years of age or older. ☐ **(Please check)**

VI. Works Cited

- Adams, Carolyn T. "The Liberal Arts in a Culture of Careerism." *CCASNewsletter* 20.1 (1999): 1-7.
- Bartholomae, David. "Inventing the University." *Journal of Basic Writing* Vol. 5 No. 1(1986): 4-23. Print.
- Bean, John C. *Engaging ideas: the professor's guide to integrating writing, critical thinking, and active learning in the classroom*. San Francisco: Jossey-Bass, 1996. Print.
- Beason, Larry. "Textbooks on argumentative writing display much agreement, though each has Its own slant." *Composition Chronicle* Vol. 8 No. 2 (1995) 1-4.
- Beyer, Barry. "Critical thinking: what is it?" *Social Education* 49 (1985): 270–276.
- Boghossian, Peter. "How to Make an Argument." *The Clearing House* 76.2 (2002): 107-109. Print.
- Bok, Derek. *Our Underachieving Colleges*. Princeton: Princeton University Press, 2006.
- Bruner, Jerome. *On Knowing: Essays for the left hand*. Cambridge, 1962.
- Burkhalter, Nancy. "How Persuasive Writing Aids Critical Thinking." *Speech Communication Association*, November 1993, Miami Beach, FL. Print.
- Clark, Miriam Marty. "Beyond Critical Thinking." *Pedagogy* Vol. 9 No. 2 (2009): 325-330 Print.
- Condon, William, and Kelly-Riley, Diane. "Assessing and teaching what we value: The relationship between college-level writing and critical thinking abilities." *Assessing Writing* Vol. 9 (2004): 56-75.

- Desjardins, Linda A. "An Argument for a Three-Phased Approach to Argumentative Writing." Apr 89. Educational Resources Information Center - Teaching Guides. New York. Print.
- Donald, Janet Gail. "The Development of Thinking Processes in Postsecondary Education: Application of a Working Model." *Higher Education* 24.4 (1992): 413-430. Print.
- Emmel, Barbara, Paula Resch, and Deborah Tenney, eds. *Argument Revisited, Argument Redefined: Negotiating Meaning in the Composition Classroom*. California, 1996.
- Fausty, Joshua. "Framing Composition: A Graduate Instructor's Perspective." *Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, and Culture* Vol.1, No.3 (2001): 489-505.
- Flower, Linda and Hayes, John. "The Cognition of Discovery: Defining a Rhetorical Problem." *College Composition and Communication* Vol.31, No.1 (1980): 21-32.
- Geertsen, H. Reed. "Rethinking Thinking about Higher-Level Thinking." *Teaching Sociology* 1.31 (2003): 1-19. Print.
- Garside, Colleen. "Look who's talking: a comparison of lecture and group discussion teaching strategies in developing critical thinking skills." *Communication Education*, 45 (1996): 212-227.
- Hahn, Stephen. "Counter-Statement: Using Written Dialogue to Develop Critical Thinking and Writing." *College Composition and Communication*, Vol. 38, No. 1 (1987): 97-100.
- Hatcher, Donald. "Why Critical Thinking Should Be Combined with Written Composition." *Informal Logic* 19.2-3 (1999): 171-183. Print.
- Jowett, Benjamin. *Plato: Symposium*. London, 1999.

- Malcolm, Nancy. "Analyzing the News: Teaching Critical Thinking Skills in a Writing Intensive Social Problems Course." *Teaching Sociology*, Vol. 34 (2006): 143-149
- Sanders, Judith A. *et al.* "Does Teaching Argument Facilitate Critical Thinking?" *Communication Reports* 7.1 (1994): 27-35. Print.
- Scriven, M., & Paul, R. Defining critical thinking. *CriticalThinking.org*. Jan 2005.
- Stewart, Ruth. "Teaching Critical Thinking in the Composition Classroom: Sometimes More is More." *Teaching English in the Two Year College* 29.2 (2001): 162-171. Print.
- Smith, Cheryl Hogue. "Diving In Deeper: Bringing Basic Writers' Thinking to the Surface." *Journal of Adolescent & Adult Literacy* 53.8 (2010): 668-676.
- Tumposky, Nancy Rennau. "The Debate Debate." *The Clearing House* 78.2 (2004): 52-55. Print.
- Whitaker, A.K. "Critical Thinking in the Tower Ivory." *Academic Questions* Winter (2002-03): 51-59.
- Wheelwright, Phillip. *Metaphor and Reality*. Bloomington, 1962.